

WHAT IS CLAIMED IS:

1. A method of forming a sandwiched, multilayer composite panel, comprising the steps of:
  - (A) ascertaining abrasion and mechanical resistance, insulation, flexibility, solidity, and memory properties that are necessary to at least satisfy specific requirements for a panel suited for use in a particular kind of construction;
  - (B) choosing and obtaining a particular kind of recycled or waste material based on the ascertaining;
  - (C) shredding or melting the recycled or waste material into strips,
  - (D) transforming wood waste into sheets of wood veneer;
  - (E) placing the strips on one sheet of the wood veneer;
  - (F) joining the strips to the one sheet of wood veneer;
  - (G) placing a further sheet of the wood veneer onto the joined strips to sandwich the same between two sheets of the wood veneer; and
  - (H) joining the strips to the further sheet of the wood veneer to form a sandwiched, multilayer composite panel.
2. A method as in claim 1, further comprising:
  - applying pressure to the sandwiched, multilayer composite panel for a duration sufficient for a manner in which the strips are joined to the one sheet of

wood veneer and to the further sheet of the wood veneer to harden to keep the sandwiched, multilayer composite panel together as an integral unit.

3. A method as in claim 1, further comprising:  
repeating steps (B), (C), (D), (E), (F) and (G) to add further layers to the sandwiched, multilayer composite panel as necessary until properties of the multilayer composite panel together with the further layers satisfy the specific requirements.
4. A method as in claim 1, further comprising obtaining the wood waste from leftover remnants of trees and from logging operations in a forest area.
5. A method as in claim 1, further comprising obtaining the wood waste from sawdust, the transforming including compounding the sawdust and bonding the compounded sawdust together to form the sheets of wood veneer.
6. A method as in claim 1, wherein the choosing and obtaining a particular kind of recycled or waste material based on the ascertaining is selected from a group consisting of plastic, tires and metal.
7. A method as in claim 6, wherein the choosing and obtaining is based on comparing known properties of the particular kind of the recycled or waste material with the specific requirements.

8. A method as in claim 7, wherein the choosing and obtaining take into account an availability of the plastic, tires and metal.

9. A method as in claim 6, wherein the plastic is selected from a group consisting of recycled bottles, cans, carpets or rugs made of plastic or synthetic material, the metal is selected from recycled aluminum and tin cans, plates and foil, and the tires are selected from a group consisting of recycled tire components and used tires.

10. A method as in claim 1, wherein the strips are of a type selected from a group consisting straws, air bubble cushioning, balls, bars and sheets.

11. A method as in claim 1, further comprising treating at least one of the strips and the sheets to resist damage caused by fire, insects and water.

12. A method as in claim 1, wherein the ascertaining includes receiving information from a customer and basing the specific requirements on the information.

13. A method as in claim 12, wherein the receiving is via a menu-driven interface with the customer.

14. An apparatus for providing sandwiched, multilayer composite panel, comprising:

(A) means for ascertaining abrasion and mechanical resistance, insulation, flexibility, solidity, and memory properties that are necessary to at least satisfy specific requirements for a panel suited for use in a particular kind of construction;

(B) means for choosing and obtaining a particular kind of recycled or waste material based on the ascertaining;

(C) means for shredding or melting the recycled or waste material into strips;

(D) means for transforming wood waste into sheets of wood veneer;

(E) means for placing the strips on one sheet of the wood veneer;

(F) means for joining the strips to the one sheet of wood veneer;

(G) means for placing a further sheet of the wood veneer onto the strips to sandwich the same between two sheets of the wood veneer; and

(H) means for joining the strips to the further sheet of the wood veneer to form a sandwiched, multilayer composite panel.

15. An apparatus as in claim 14, further comprising:

means for applying pressure to the sandwiched, multilayer composite panel for a duration sufficient for a manner in which the strips are joined to the one sheet of wood veneer and to the further sheet of the wood veneer to harden to keep the sandwiched, multilayer composite panel together as an integral unit.

16. An apparatus as in claim 14, further comprising:

means for actuating the means (B), (C), (D), (E), (F) and (G) to add further layers to the sandwiched, multilayer composite panel as necessary until properties

of the multilayer composite panel together with the further layers satisfy the specific requirements.

17. An apparatus as in claim 14, further comprising means for obtaining the wood waste from leftover remnants of trees and from logging operations in a forest area.
18. An apparatus as in claim 14, further comprising means for obtaining the wood waste from sawdust, the transforming including compounding the sawdust and bonding the compounded sawdust together to form the sheets of wood veneer.
19. An apparatus as in claim 14, wherein the means for choosing and obtaining a particular kind of recycled or waste material based on the means for ascertaining is selected from a group consisting of plastic, tires and metal.
20. An apparatus as in claim 19, wherein said means for choosing and obtaining includes means for comparing known properties of the particular kind of the recycled or waste material with the specific requirements.
21. An apparatus as in claim 20, wherein the means for choosing and obtaining takes into account availability of the particular kind of the recycled or waste material.
22. An apparatus as in claim 19, wherein the plastic is selected from a group consisting of recycled bottles, cans, carpets or rugs made of plastic or synthetic material, the

metal is selected from a group consisting of recycled aluminum and tin cans, plates and foil, the tires are selected from a group consisting of recycled tire components and used tires.

23. An apparatus as in claim 14, wherein the strips are of a type selected from a group consisting of straws, air bubble cushioning, balls, bars and sheets.
24. An apparatus as in claim 14, further comprising means for treating at least one of the strips and the sheets to resist damage caused by fire, insects and water.
25. A multi-layer, composite panel, comprising:
  - two sheets of wood veneer; and
  - a sandwiched layer of recycled or waste strips that is sandwiched between the two sheets of wood veneer, the recycled or waste material being selected from a group consisting of plastic, metal and tires and being joined to the two sheets of wood veneer.
26. A panel as in claim 25, further comprising chemical treatment agents applied to at least one of the two sheets of wood veneer and the strips that resist damage from fire, insects and water.
27. A panel as in claim 25, further comprising a further layer on one of the two sheets of wood veneer, the further layer being comprised of a different kind of the recycled

or waste material than that of the sandwiched layer, a further sheet of wood veneer, the further layer being joined to the one of the two sheets of wood veneer and to the further sheet of wood veneer.

28. A panel as in claim 25, wherein the sandwiched layer is of a sheet.
29. A panel as in claim 25, wherein the sandwiched layer is arranged so that the recycled or waste material forms air channels between the two sheets of wood veneer that extend along an entire length of the two sheets of wood veneer.
30. A panel as in claim 25, wherein the sandwiched layer is of a construction selected from a group consisting of straws, air bubble cushioning, balls and bars.
31. A panel as in claim 25, wherein the sandwiched layer is of a length that is shorter than a length of the two sheets of wood veneer.

\* \* \* \* \*